Indiana Crop & Weather Report

INDIANA AGRICULTURAL STATISTICS
U.S. DEPARTMENT OF AGRICULTURE
PURDUE UNIVERSITY
1148 AGAD BLDG, ROOM 223
WEST LAFAYETTE IN 47907-1148
Phone (765)494-8371
Phone (800)363-0469
FAX (765)494-4315
FAX (800)363-0475

Released: Monday, 3PM July 10, 2000 Vol. 50, #14 West Lafayette, IN 47907

CROP REPORT FOR WEEK ENDING JULY 9

Farmers took advantage of favorable weather to harvest winter wheat, spray for weeds and cut hay in some areas. However, rainy conditions slowed field activities in portions of the state. Many fields of corn have reached the silking stage and prospects look good for corn this year in Indiana. Weeds remain a problem and plants have a yellowish tint in some soybean fields.

CORN AND SOYBEANS

Corn **condition** improved last week and is rated 85 percent good to excellent compared with 78 percent last year at this time. Twenty-eight percent of the corn acreage has silked compared with 23 percent last year and 8 percent for the average. Planting of double crop **soybean** acreage continued in southern areas. Soybean **condition** also improved and is rated 64 percent good to excellent compared with 76 percent last year. Thirty-eight percent of the soybean acreage is **blooming** compared with 45 percent last year and 17 percent for the average. Five percent of the soybean acreage is **setting pods** .

WINTER WHEAT

Winter wheat **harvest** made excellent progress last week. Eighty-three percent is harvested compared with 82 last year and 61 percent for the 5-year average. By area wheat harvest is 51 percent complete in the north, 93 percent complete in the central regions and 96 percent complete in the south. Winter wheat **condition** is unchanged from last week, rated 73 percent good to excellent.

OTHER CROPS

Pasture condition is rated 16 percent excellent, 57 percent good, 23 percent fair and 4 percent poor. Second cutting of **alfalfa hay** is 52 percent complete compared with 63 percent a year ago and 33 percent for the 5-year average.

DAYS SUITABLE and SOIL MOISTURE

For the week ending Friday, 3.5 days were rated **suitable for fieldwork** . **Topsoil moisture** was rated 4 percent short, 71 percent adequate and 25 percent surplus. **Subsoil moisture** was rated 2 percent very short, 15 percent short, 71 percent adequate and 12 percent surplus.

CROP PROGRESS

Crop	This Week	Last Week	Last Year	5-Year Avg
	Percent			
Wheat Harvested	83	47	82	61
Corn Silking	28	5	23	8
Soybeans Blooming	38	18	45	17
Soybeans Podding	5	0	4	1
Alfalfa, Second Cutting	52	20	63	33

CROP CONDITION

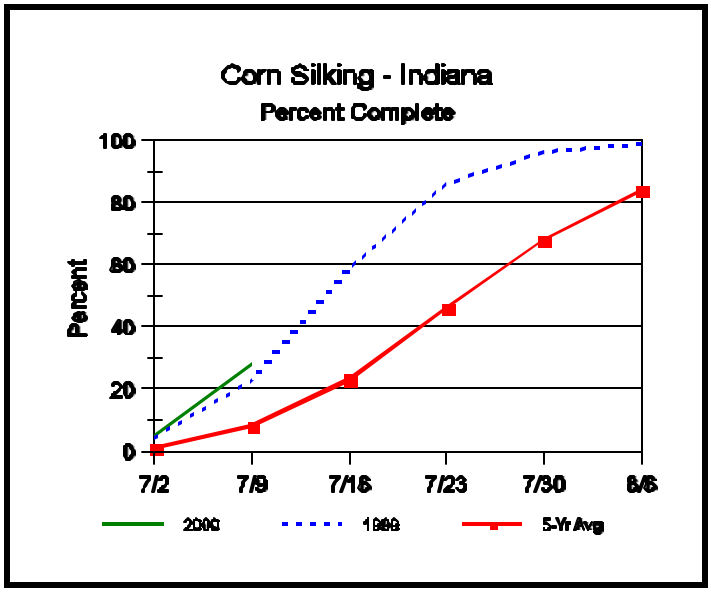
Crop	Very Poor	Poor	Fair	Good	Excel-lent
	Percent				
Corn	1	2	12	52	33
Soybeans	2	7	27	51	13
Winter Wheat 2000	5	6	16	50	23
Pasture	0	4	23	57	16

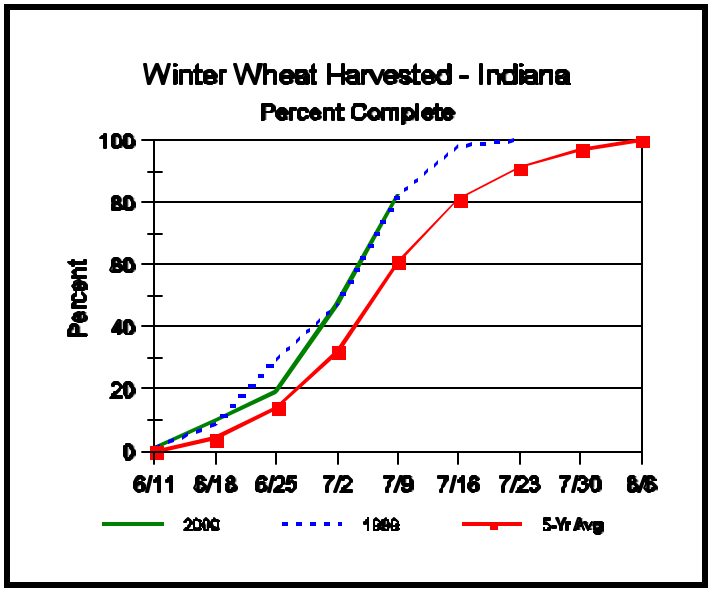
SOIL MOISTURE

	This Week	Last Week	Last Year
	Percent		
Topsoil			
Very Short	0	0	6
Short	4	3	33
Adequate	71	73	55
Surplus	25	24	6
Subsoil			
Very Short	2	3	6
Short	15	14	29
Adequate	71	71	60
Surplus	12	12	5

--Ralph W. Gann, State Statistician
--Bud Bever, Agricultural Statistician
E-Mail Address: nass-in@nass.usda.gov
http://info.aes.purdue.edu/agstat/nass.html

Crop Progress





Ear Size Determination in Corn

- Ear size determination begins by the time a corn plant has reached knee-high and finishes 7 to 10 days prior to silk emergence

Potential ear size is an important factor that contributes to the grain yield potential of a corn plant. Severe plant stress may limit the potential ear size, and thus grain yield potential, before pollination has even occurred. Optimum growing conditions set the stage for maximum ear size potential and exceptional grain yields at harvest time. Ear size determination begins by the time a corn plant has reached knee-high and finishes 7 to 10 days prior to silk emergence.

Ear Shoot Development. There are as many potential ears as there are leaves on the plant since every stalk node has an axillary bud associated with it. However, while axillary buds exist at the upper 6 to 8 nodes of the stalk, they normally never become active.

Careful dissection of stalks at about growth stage V10 (10 leaf collars) will reveal 8 to 10 ear shoots. Each ear shoot is attached at a stalk node, behind its respective leaf sheath. At growth stage V10, the identifiable ear shoots are composed primarily of husk leaf tissue. The developing ears themselves are only a fraction of an inch in length.

Initially, the lower ear shoots are longer than the upper ones because the lower ones form first. Later on, the upper one or two ear shoots take priority over the others and become the harvestable ears. Brace root development will also rip off ear shoots at the lowest stalk nodes.

The uppermost, harvestable ear will normally be located at the 12th to 14th leaf. Development of the upper ear is favored over the lower ones because of hormonal 'checks and balances', plus the proximity of the upper ear to the actively photosynthesizing leaves. Damage to the upper ear prior to pollination can allow one or more of the lower ones to develop into harvestable ears.

Ear Size Determination. Total kernel number is determined by the number of kernel rows and the number of kernels per row. Row number is one of several yield components in corn. Every pair of rows is generally equal to 20 bushels per acre (for average populations and ear lengths). Kernel number per row is another yield component of corn. For a 16-row ear, one kernel per row is equal to about five bushels per acre (for average populations). Typically, from 750 to 1000 ovules (potential kernels) develop on each ear shoot. Actual (harvestable) kernel number per ear averages between 400 and 600.

(Continued on Page 4.)

Weather Data

Week ending Sunday July 9, 2000

Station	Past Week Weather Summary Data							Accumulation				
	Air Temperature				Precip.		Avg 4 in Soil	April 1, 2000 thru July 9, 2000				
								Precipitation		GDD Base 50°F		
	Hi	Lo	Avg	DFN	Total	Days	Temp	Total	DFN	Days	Total	DFN
Northwest(1)												
Valparaiso_Ag	85	60	72	+0	1.00	4		18.89	+5.61	52	1178	-31
Wanatah	89	57	73	+2	0.91	3	79	16.25	+3.57	42	1180	+31
Wheatfield	87	60	74	+3	0.32	2		15.60	+3.08	37	1253	+69
Winamac	86	58	74	+2	0.42	4	79	13.00	+0.41	38	1239	-6
North Central(2)												
Logansport	86	58	74	+2	0.78	3		13.22	+1.15	44	1272	+8
Plymouth	87	58	74	+0	0.73	3		15.35	+2.21	44	1149	-149
South_Bend	84	59	73	+0	0.66	3		15.33	+3.00	47	1194	+2
Young_America	87	56	74	+1	0.74	2		14.33	+2.26	40	1344	+80
Northeast(3)												
Bluffton	85	55	73	-2	1.41	4	73	14.61	+1.95	45	1290	-8
Fort_Wayne	86	54	73	-2	1.25	3		16.65	+5.21	43	1264	+10
West Central(4)												
Crawfordsville	86	55	74	+1	0.70	4	78	12.88	-0.51	40	1256	-135
Perrysville	85	58	74	-1	0.72	3	79	14.70	+1.23	42	1358	+4
Terre_Haute_Ag	90	60	78	+4	1.46	4	79	18.49	+5.15	42	1595	+145
W_Lafayette_6NW	88	59	75	+3	1.19	2	76	13.59	+1.17	40	1355	+86
Central(5)												
Castleton	86	58	75	-1	1.70	5		17.02	+4.25	52	1396	-15
Greenfield	86	57	75	+0	1.04	3		18.07	+4.72	47	1405	+44
Greensburg	89	60	75	+2	2.11	3		18.27	+4.63	50	1456	+113
Indianapolis_AP	86	61	76	+1	2.03	3		15.83	+3.39	39	1483	+47
Indianapolis_SE	86	58	74	-2	2.18	4		16.12	+3.35	40	1385	-26
Tipton_Ag	86	55	73	-1	1.12	4	77	12.82	+0.43	41	1209	-15
East Central(6)												
Farmland	87	53	73	+0	3.06	3	72	18.05	+5.42	46	1288	+105
New_Castle	84	54	71	-3	2.91	3		17.37	+3.66	44	1123	-90
Southwest(7)												
Dubois_Ag	89	59	77	+3	1.76	4	80	13.85	-0.77	48	1606	+143
Evansville	90	63	79	+1	0.60	3		11.43	-1.97	43	1735	+20
Freelandville	89	62	77	+2	1.03	4		13.82	-0.02	35	1564	+55
Shoals	89	60	76	+2	1.03	3		16.72	+1.91	46	1481	+37
Vincennes_5NE	88	62	77	+2	1.97	4		16.65	+2.93	43	1540	+31
South Central(8)												
Bloomington	88	57	76	+0	1.38	3		15.42	+1.88	38	1446	-22
Tell_City	89	63	79	+2	0.30	3		15.17	+0.14	38	1662	+50
Southeast(9)												
Scottsburg	88	59	76	+1	1.51	5		16.81	+3.08	39	1585	+88

DFN = Departure From Normal (Using 1961-90 Normals Period).
GDD = Growing Degree Days.
Precipitation (rain or melted snow/ice) in inches.
Precipitation Days = Days with precipitation of 0.01 inch or more.
Air Temperatures in Degrees Fahrenheit.

The above weather information is provided by AWIS, Inc.
For detailed ag weather forecasts and data visit the AWIS home page at
www.awis.com or call toll free at 1-888-798-9955.

Kernel row number determination is complete by growth stage V12. Kernel rows initiate as 'ridges' of cells that eventually differentiate into pairs of rows. Thus, row number on ears of corn is always even unless some sort of stress disrupts the developmental process. True row number is often difficult to visualize in tiny ears dissected from plants younger than about the 12-leaf stage.

Row number is determined strongly by plant genetics rather than by environment. This means that row number for any given hybrid will be quite similar from year to year, regardless of growing conditions. Exceptions include...

Deep row cultivation after growth stage V8 may prune root systems severely enough to hinder row number determination. Applications of certain sulfonylurea herbicides beyond the labels' stated growth stage restrictions can decrease yield potential by interfering with final row number determination on the upper portion of the ear. Nearly complete defoliation by hail prior to growth stage V12 may photosynthetically 'shock' the plant and limit row number determination.

The potential number of kernels per row is complete by about 1 week before silk emergence. Kernel number (ear length) is strongly affected by environmental stresses. This means that ear length will vary dramatically from year to year as growing conditions vary. Severe stress can greatly reduce potential kernel number per row. Conversely, excellent growing conditions can encourage unusually high potential kernel number.

Bob Nielsen, Purdue University

The INDIANA CROP WEATHER REPORT (USPS 675-770), (ISSN 0442-817X) is issued weekly April through November by the Indiana Agricultural Statistics Service, Purdue University, 1148 AgAd Bldg, Rm 223, West Lafayette IN 47907-1148. Second Class postage paid at Lafayette IN. For information on subscribing, send request to above address. POSTMASTER: Send address change to the Indiana Agricultural Statistics Service, Purdue University, 1148 AgAd Bldg, Rm 223, West Lafayette IN 47907-1148.